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Report on the "Spectral and temporal modifications" practical session

In this session, we tried to implement the functions as effectively as possible by using the code already provided in the template. But our main issue was that since last year, we had not quite studied sounds so we had to get back into frequency analysis in order to understand our task better. That is to say that we didn't really understand what was at stake at first, unlike the other practical sessions that we did in other courses. The main difficulties we encountered were when we started the part 2 about synthesis and modification of the signal. The thing is that we implemented the function without really thinking about what we were doing, neither understand it. Rather we followed what was explained without really understanding it which definitely slowed us down later on when things got harder. For instance, we had not realized what "synthesis" actually represented so we had to look it up on Internet. The PSOLA (Pitch-Synchronous Overlap-Add) method ended up to be much more that what we had realized we were doing in the practical session. However, this conclusion came very later on in our work when I think that we should have looked up earlier what it actually was. This would have helped us get the global picture when from what we did, we only moved from a function to the other without knowing what was going on. Now that we have finished the practical session we understand how it works. Indeed, we found out that it allows us to manipulate speech signals in terms of their time-scale and pitch characteristics. It finds applications in speech synthesis, voice conversion, audio effects processing, and other areas where the modification of speech signals is desired while maintaining naturalness and intelligibility.

When it comes to design, we tried to make it look as good as we could using our basic Markdown knowledge, but there isn't much to say about it. We put horizontal lines to separate the parts and titles to each one of them (as for subtitles as well).